State of California
Department of Transportation
1801 30th Street
Sacramento CA 95816
(916) 227-8060

Caltrans – Industry Falsework Forum

Minutes of Meeting
Tuesday June 26, 2007 at 09:00 AM

Location: 3353 Michelson Dr, Irvine CA Room D4139

Subject: Caltrans – Industry Falsework Forum Meeting # 5

Attendees

Initials	Name	Representing	Initials	Name	Representing
JFW	John F. Walters	Caltrans OSC	DJ	Duff Joseph	Erreca's, Inc.
JB	John Babcock	Caltrans OSC	JVB	Jake Van Baarsel	Washington G.
KB	Ken Bocchicchio	Caltrans OSC	BM	Brian Mapel	FCI
FG	Frank Gillespie	Yeager/Skanska	TZ	Tibor Zikov	Granite
JD	John Diskin	Yeager/Skanska	BK	Bill Kidwell	CCMyers
KB	Ken Burkle	Caltrans OSC			

1. Agenda

Time	Topic	Speaker
09:15	1. Issues from January 2007 Meeting a. Grounding of longitudinal Loads into pinned columns b. Camber: What portion of the dead load is used to determine camber? c. Guidelines for using winches to support falsework over traffic. d. Guidelines for rolling soffit out over traffic	John Walters
10:30	2. UPRR/BNSF Guidelines for Railroad Grade Separations	John Walters
11:00	3. Items from Bridge Construction Forum a. Review of Structure Rep Falsework Comments by Senior	John Walters
11:30	4. Trenching and Shoring Issues	All
12:00	5. Open Discussion	All

2. Meeting Notes

A. Discussion of Emergency contracts – waiver of various requirements to expedite work.
   1. Time requirements – lengthy pre-cast facility audit
   2. Out of state inspection fee ($5000)

B. Longitudinal loads into pinned columns
   1. FG mentioned that on the Mira Loma job the designer allowed for a 10kip load into a pinned column. FG estimated a greater capacity. What's the procedure for determining the capacity?
   2. Have designer give a capacity on the plans.
   3. DJ suggested that different designers would come up with different capacity.
   4. Get a definitive method for determining the capacity of pinned columns. This is an action item for JW.

C. Camber:
   1. In the 1977 falsework manual, Ted DeRosia recommends using stem and soffit loads plus 20% of deck load to determine values for camber strips.

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2. DJ has had good success using 1/3 of total Dead Load. Designers have agreed with the values he is using.
3. JD suggests that for a 9 ft deep box, only stem and soffit dead load is needed for camber values.
4. JVB – Use Stem & soffit plus 25% of deck
5. KB – Never add deck load for non-post tensioned bridge. Use the same strip values on all falsework stringers for a given span. Base the camber value on the exterior girder.
6. JD – Camber is addressed in the bridge deck construction manual.
7. JW – We (CT/OSC) need to have a uniform procedure
8. BK – They tend to average out the values to the nearest ¼ inch
9. JVB – Tunnel section camber is more challenging than a normal falsework span. A standard procedure is needed.
10. KB – Camber at the hinge… Grind it or jack it. A bump before or a dip after.
11. BM – Access to the designer would be helpful.

D. Guidelines for using winches to support falsework over traffic.
1. JW - Discussion of possible guidelines for use. Redundant system to be independent i.e. HS rod system in addition to winch & cable system.
2. DJ – Erreca's always uses rods with winches
3. JVB – Doesn't think the rods are needed
4. BM – Agrees with JVB
5. TZ – Had winch flip over onto railroad
6. DJ – Having winch cables go through the deck overhang is safer. Prevents winch from flipping over and off of bridge.
7. JB – Design of falsework needs to consider available windows for erection and removal.
8. BM – Special designs fro limited work windows add substantially to design & construction costs.
9. DJ – CT should look at design alternatives in limited construction widow situations
10. JVB – Pre-cast over Railroads is a common alternative
11. JB – How old are winches?
12. JD – Old crane certification
13. KB – Vertical load issue
14. DJ – Manufacturer de-rated for use
15. BK – Winches classified as hoist
16. FG - Old doesn't mean not good
17. Various comments about capacity
18. FG – Electric motor does lowering. What does Pipelow mean in his memo? What's a suspended load? Crane load? Concrete pump?
19. TZ – Do we know of any failures?
20. JW – No.
21. BK – What happened to initiate the memo?
22. JW – We'll look into it.
23. JVB – Washington group winches recertified every 4 years and inspected every 6 months.
24. JB – Is group consensus to use winches only?
25. FG – Mechanical system with dog set.
26. JD – Cranes to strip falsework. Is it allowable?
27. BM – Structural engineer to certify crane for falsework stripping. Not to be used as a lift boom.
28. JB – what does CalOSHA say?

E. Guidelines for rolling out soffit over traffic:
1. JD – Standing on soffit while rolling it out. They had to do it at night under lane closure.
2. JW – CTOSC leaning towards allowing with guidelines.
3. TZ – Go with pre-cast.

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4. Discussion of stay in place forms
5. BK – Continuous over 3 girders may be too long. Eight ft. is typical length of 4 x 4.
6. DJ – With long spans over traffic, there is typically more that one stringer per girder.

F. UPRR/BNSF Shoring requirements:
1. Review time not consistent across state.
2. Deflection limit to 3/8" for shoring within 12 ft of track centerline.
3. Revision to allowable stresses for steel in bending and in shear

G. Senior review of structure rep falsework review comments:
1. As a policy not needed
2. Opportunity to discuss with Senior needs to be there.

H. Allowance for 33% overstress for temporary trenching & shoring:
1. JW – The CT Shoring Manual from May 1977 indicates that the +33% overstress is an arbitrary allowance that is given in the Construction Safety Orders. We haven't been able to find this allowance in the current Construction Safety Orders and are thinking about eliminating it from the current CT Shoring Manual.
2. FG – Someone used good judgment in allowing the +33% overstress. In practice, the designed shoring system does not experience the estimated soil pressures.
3. JVB – Described a 60 ft deep shoring system in LA where strain gages indicated that shoring is overstressed (60ksi). Didn't see any deflections. He has no problem using 33 to 50% overstress.
4. FG – Agrees with JVB.
5. JVB – A stiff system was specified in LA.
6. BM – Overstress allowance gives big benefits – no problems,
7. KB – the overstress applies to flexural members only
8. FG – Steel plate lagging may bow but will not fail the system
9. JW – Consensus is that it's not a good idea to get rid of the +33% overstress allowance

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These notes may be relied upon as the approved record of matters discussed and conclusions reached during the meeting.

Prepared by: John F. Walters PE
Signed by: John F. Walters

Date: 07/18/2007